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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LEE, PHILIP C

ART UNIT	PAPER NUMBER
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2152

MAIL DATE	DELIVERY MODE
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05/30/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/932,456

Applicant(s)

OEHLER ET AL.

Examiner

Philip C. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17, 19, 21-32, 34 and 36-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17, 19, 21-32, 34 and 36-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/19/07</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. This action is responsive to the amendment and remarks filed on March 19, 2007.
2. Claims 1-17, 19, 21-32, 34, and 36-41 are presented for examination and claims 18, 20, 33, and 35 are canceled.
3. The text of those sections of Title 35, U.S. code not included in this office action can be found in a prior office action.

Claim Rejections - 35 USC 103

4. Claims 1-4, 6-10, 12, 13, 16, 21, 23-26, 28, 31, 36-37, 39, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted prior Art (hereafter "AAPA") in view of Neches et al, U.S. Patent 5,303,383 (hereinafter Neches).
5. Neches was cited in the previous office action.
6. As per claims 36 and 39, AAPA teaches the invention substantially as claimed including a computer implemented method for use in a computer system (the Hyper Transport HT architecture) comprising: a plurality of resources including a plurality of processors (Fig. 2) and a distributed point-to-point transmission infrastructure for interconnecting the plurality of processors (spec. page 2, lines 3-8), the method comprising configuring the plurality of resources into at least one partition (building one single, undivided system, spec. page 2, lines 17-23), each partition comprising a subset of

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the plurality of resources, the configuring of resources being effected (routing tables, spec., page 2, lines 6-8, 18-21) by enabling operation of at least one dedicated physical link between at least one of the plurality of processors and at least other one of the plurality of processors (spec., page 2, lines 6-8, 20-21), the at least one link corresponding to a portion of the point-to-point transmission infrastructure (spec., page 2, lines 3-8, 20-21).

7. AAPA does not spell out that enabling is according to "a previously specified partitioning schema". AAPA, however, clearly discloses that a primary processor builds routing tables using the information collected from all system resources utilizing a discovery algorithm in order to enable the links between the plurality of processors. The building of a routing table in a specific processor constitutes writing instructions/commands/information about the links between such processor and the other processors (spec. page 2, lines 6-8, 20-21). Obviously, these instructions/commands/information would be based on the primary processor figuring out the topology of the system based on the collected information. Furthermore, AAPA teaches all available resources must be capture utilizing the discovery algorithm prior to building a single, undivided system from the captured resources (or to configure the resources into a partition) (spec. page 2, lines 22-23). As stated in the previous office action, assuming that all system processors 202a-202d of Fig. 2 are responding to the discovery algorithm, then the primary processor would build the routing tables in these processors in accordance with a topology picture of the system showing processors 202a-202d as one partition. The topology picture (defined by utilizing the discovery algorithm)

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that has to be created by the primary processor in order to be able to build a single, undivided system (as a one partition) and this information is used to build the routing tables and hence enable the links is certainly considered "a previously specified partitioning schema ". "Previously specified" is interpreted by the examiner as prior to building a single, undivided system or prior to building the routing tables.

8. AAPA does not teach a plurality of partitions. Neches teaches configuring a plurality of resources into a plurality of partitions (col. 35, lines 40-46; col. 36, lines 20-21, and 37-39), each partition comprising a subset of the plurality of resources and a portion of the point-to-point transmission infrastructure (i.e., communication of network 14 uses point-to-point, col. 6, lines 26-27; col. 27, lines 26-27), the portion of the point-to-point transmission infrastructure in each partition being distinct from and non-overlapping with the portion of the point-to-point transmission infrastructure in each other partition (col. 35, lines 42-45; col. 36, lines 11-14; col. 37, lines 22-24, and 37-38).

9. It would have been obvious to one skilled in the art at the time of the invention to combine AAPA teachings and Neches because Neches's teaching of configuring a plurality of resources into a plurality of partitions would enhance system of AAPA by allowing resources to communicate within one partition, and allowing resources communication between partitions of a network.

10. As to claims 1 and 23, the claims are rejected for the same reasons as claims 36 and 39 above. In addition, AAPA discloses a computer system (the Hyper Transport HT

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architecture) comprising: a plurality of resources including a plurality of processors (Fig. 2), a distributed point-to-point transmission infrastructure for interconnecting the plurality of processors (spec., page 2, lines 3-8), and at least one partitioning processor for configuring the plurality of resources into at least one partition (building one single, undivided system; primary processor 202a, Fig. 2, spec. page 2, lines 17-23), each partition comprising a subset of the plurality of resources, the at least one partitioning processor (primary processor 202a, Fig. 2) being operable to configure the resources by writing to at least one of a plurality of routing tables associated with the processors (spec., page 2, lines 6-8, 18-21), each routing table representing dedicated physical links between an associated processor and other ones of the plurality of processors, the links corresponding to portions of the point-to-point transmission infrastructure (spec., page 2, lines 6-8, 20-21).

11. AAPA does not teach a plurality of partitions. Neches teaches configuring a plurality of resources into a plurality of partitions (col. 35, lines 40-46; col. 36, lines 20-21, and 37-39), each partition comprising a subset of the plurality of resources and a portion of the point-to-point transmission infrastructure (i.e., communication of network 14 uses point-to-point, col. 6, lines 26-27; col. 27, lines 26-27), the portion of the point-to-point transmission infrastructure in each partition being distinct from and non-overlapping with the portion of the point-to-point transmission infrastructure in each other partition (col. 35, lines 42-45; col. 36, lines 11-14; col. 37, lines 22-24, and 37-38).

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12. It would have been obvious to one skilled in the art at the time of the invention to combine AAPA teachings and Neches because Neches's teaching of configuring a plurality of resources into a plurality of partitions would enhance system of AAPA by allowing resources to communicate within one partition, and allowing resources communication between partitions of a network.

13. As to claims 2, 3, and 24, AAPA includes at least one of a memory device, a memory range, an I/O bus, I/O devices coupled to an I/O bus, and an interrupt mechanism for routing interrupts, I/O switch, the I/O switch having one the routing tables associated therewith representing links between the I/O switch, at least one of the processors, and at least one I/O resource (inherent in Fig. 2).

14. As to claim 4, AAPA discloses the at least one I/O resource comprises at least one of an Ethernet device and a SCSI device (Fig. 2).

15. As to claims 6 and 25, AAPA and Neches do not specifically disclose the detail of the distributed point-to-point transmission infrastructure. However, it would have been obvious to one skilled in the art at the time of the invention that coherent or non-coherent Hyper Transport infrastructure is an inherent detail of the Hyper Transport architecture discloses by AAPA (spec. page 2, lines 10-16).

16. As to claims 7 and 8, AAPA and Neches do not specifically disclose the processors topology. However, it would have been obvious to one skilled in the art at the

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time of the invention that AAPA'S disclosure can support a variety of processor topologies specially if the routing tables are software programmable. The choice, then, of processor's topology is a matter of design preference.

17. As to claim 9, AAPA discloses the distributed point-to-point transmission infrastructure directly connects each of the processors with every other one of the processors (spec. page 2, lines 3-6).

18. As to claims 10, 21, and 26, AAPA discloses the at least one partitioning processor comprises at least one of the plurality of processors (primary processor 202a, Fig. 2).

19. As to claim 12, AAPA discloses a boot memory for facilitating initialization of the computer system via at least one of the plurality of processors as the at least one partitioning processor (spec. page 2, lines 18-20).

20. As to claims 13 and 28, AAPA discloses that the previously specified partitioning schema is generated in response to an event occurring during operation of the computer system (at initialization, spec. page 2, lines 18-21).

21. As to claims 16 and 31, AAPA discloses the at least one partitioning processor is

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operable to generate the routing tables upon initialization of the computer system (spec. page 2, lines 18-21).

22. As to claims 37 and 40, AAPA discloses the enabling operation of the at least one link comprises writing to at least one of a plurality of routing tables associated with the processors (spec. page 2, lines 6-8, 18-21).

23. Claims 1, 23, 36, and 39, are further rejected under 35 U.S.C. 103(a), and claims 15 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted prior Art (hereafter "AAPA") and Neches in view of Masuyama et al, U.S. Patent 6,961,761 (hereafter "Masuyama").

24. Masuyama was cited in the last office action.

25. As to claims 1, 23, 36, and 39, the claims are rejected for the same reasons as disclosed by AAPA in view of Neches above. In addition, Masuyama teaches a system and method for partitioning a computer system where writing routing tables (or enabling links between computers) is according to a previously specified partitioning schema (col. 1, line 62 to col. 2, line 3; col. 3, lines 35-38). It would have been obvious to one skilled in the art at the time of the invention to combine AAPA teaching, Neches, and Masuyama because Masuyama's use of previously specified partitioning schema would improve control of partition of the system discloses by AAPA and Neches (see, for example, Masuyama, col. 1, lines 54-56).

26. As to claims 15 and 30, AAPA and Neches do not apparently disclose a user interface to specify the partitioning schema. Masuyama discloses a user interface for providing an input from the user (col. 3, lines 11-23; 170 of Fig. 2). It would have been obvious to one skilled in the art at the time of the invention to modify AAPA's and Neches's teachings by adding a user interface with a link to the partitioning processor in order to allow a system management to set a partitioning schema in specific events as needed. This would add enhanced flexibility to AAPA system.

27. Claims 1, 23, 36, and 39 are further rejected under 35 U.S.C. 103(a), and claims 5, 11, 19, 22, 27, 34, 38, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted prior Art (hereafter "AAPA") and Neches in view of Van Doren, U. S. Patent Publication Application 2001/0037435.

28. Van Doren was cited in the last office action and in IDS paper filed 2/6/2003.

29. As to claims 1, 23, 36, and 39, the claims are rejected for the same reasons as disclosed by AAPA in view of Neches above. In addition, Van Doren, discloses a system and method for partitioning a computer system where writing routing tables (or enabling links between computers) is according to a previously specified partitioning schema (The elected processor preferably programs the routing table in accordance with programmed I/O or control status register write operation (0058)). It would have been obvious to one skilled in the art at the time of the invention to combine AAPA's teachings, Neches and

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Van Doren because Van Doren's use of previously specified partitioning schema would improve control of partition of the system discloses by AAPA and Neches (see, for example, Van Doren, (0010)).

30. As to claim 5, Van Doren discloses each routing table comprises a table of entries; each of selected ones of the entries associating an address of one of the resources with one of the processors and a link for connecting with the one of the processors (Fig. 5).

31. As to claims 11 and 27, Van Doren discloses a separate partitioning entity from the plurality of processors ((0056)-0057)).

32. As to claims 19, and 34, Van Doren discloses the at least one partition comprises a functional subset of the plurality of resources ([0011]; [0015]); and [0046]).

33. As to claim 22, Van Doren discloses the at least one partitioning processor comprises more than one partitioning processor ([0058]).

34. As to claims 38 and 41, Van Doren discloses closing at least one switch associated with the at least one link according to the previously specified partitioning schema ([0033]).

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35. Claims 1, 23, 36, and 39 are further rejected under 35 U.S.C. 103(a), and claims 14, 17, 29, and 32 are rejected under 35 U.S.C. 103(a), as being unpatentable over Applicant Admitted prior Art (hereafter "AAPA") and Neches in view of Lorenzen et al, U. S. Patent 6,188,759 (hereafter "Lorenzen").

36. Lorenzen et al. was cited in the last office action and in IDS paper filed 2/6/2003.

37. As to claims 1, 23, 36, and 39, the claims are rejected for the same reasons as disclosed by AAPA in view of Neches above. In addition, Lorenzen, discloses a system and method for partitioning a computer system where writing routing tables (or enabling links between computers "switches") is according to a previously specified partitioning schema (network processor 16 communicates with each switch 12 to collect information and respond with routing recommendation, col. 2, lines 46-49, and provides each switch with routing protocols in response to various factors, including congestion and equipment operation, col. 2, lines 55-60, i.e. a previously specified partitioning schema would be a result of collecting this information and in effect will corresponds to a definition of the resources that are decided from congestion and equipment operation). It would have been obvious to one skilled in the art at the time of the invention to combine AAPA, Neches and Lorenzen because Lorenzen's use of previously specified partitioning schema would improve control of partition of the system discloses by AAPA and Neches (see, for example, col. 1, lines 18-30).

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38. As to claims 14, 17, 29, and 32, AAPA and Neches do not disclose that the previously specified partitioning schema is generated in response to failure of at least one of the processors, a change in operating load associated with at least one of the resource, passage of a period of time, use of a particular software, and a change in available power resource. Lorenzen, on the other hand, discloses dynamic generation to the specified partitioning (routing) schema while the system is in operation (col. 1, lines 45-46) in accordance to different events (col. 1, lines 60-65; col. 4, lines 5-11) and which obviously may include any variations of operational event.

39. Applicant's arguments filed on 3/19/07 have been fully considered but they are not persuasive.

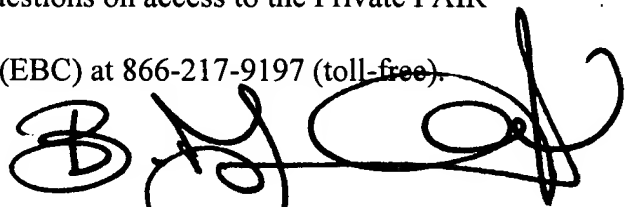
40. In the remarks, applicant argued that:

(1) The cited prior arts fail to teach dedicated physical links as described and claimed in the present application.

41. In response to point (1), AAPA teaches the processors are interconnected via a plurality of communication links and requests are transferred among the processors over the links according to routing tables associated with each processor (In the Background of the Invention of the Specification, page 2, lines 6-8). This means the routing table (the configuring of resources) enables transmission of request of a plurality of communication links (operation of dedicated physical links) between processors.

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42. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip C Lee whose telephone number is (571)272-3967. The examiner can normally be reached on 8 AM TO 5:30 PM Monday to Thursday and every other Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on (571) 272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



BUNJOB JAROENCHONWANIT
SUPERVISORY PATENT EXAMINER

5/24/07